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veral hours in longitude (suppose 3, at 8h distance in longitude), each recording at, or nearly at noon, would, when the results were assembled, keep up a continuous history of the solar disk.

"With regard to proper preparation of paper, or the use of collodion acid, the photographic art is now so much advanced, that no difficulty can arise in fixing upon fitting preparations, or the manipulations necessary for multiplying them. But it would be very requisite that many impressions of each day's work should be taken and distributed, and an interchange kept up among observers.

"*April* 24, 1854."

Observations of Comet I. 1855. By Dr. Donati.

(*Communicated by Mr. Drach.*)

1855.	Florence M.T.	Comet—Star. Δα.	Comet—Star. Δδ.	Comet's Apparent R.A.	Comet's Apparent Decl.
	h m s	m s	′ ″	° ′ ″	° ′ ″
Feb. 15	17 9 8·1	+4 7·02	−17 34·0	16 30 57·37	−28 12 31·8*
	17 37 38·5	−4 55·76	+ 1 57·7	16 30 59·30	−28 12 30·3†

* 5 comparisons with *a*. † 3 comparisons with *b*.

Adopted Apparent Places of Comparison Stars.

		R.A.	Decl.		
		h m s	° ′ ″		
a	Feb. 15	16 26 50·35	−27 54 57·8	Piazzi 113	Hora xvi.
b	—	18 35 55·06	−28 14 28·0	— 159	—

The comet was very faint.

On the Constitution of the Atmosphere, upon which Laplace's Table of Astronomical Refractions is founded. By Sir J. W. Lubbock, Bart. F.R.S.

"I have elsewhere given a table showing the constitution of the atmosphere, upon which Ivory's table of refractions, and also that upon which my own table of refractions, is founded.

"I have calculated the following table from the expressions given by Laplace in the fourth volume of the *Méc. Cél.* p. 265:—

Height in Miles.	Laplace. Pressure,	Laplace. Temp.	Laplace. Density.
	inch.	Fahr.	
0	29·94	32·00	1·00000
1	24·33	6·92	·85744
2	19·56	−14·14	·72283
3	15·57	32·60	·60010
4	12·31	47·24	·49114
5	9·60	60·23	·34709
10	2·54	111·21	·11743
15	·60	120·00	·02937
20	·13	139·70	·00674

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"The pressures in Laplace's theory are up to the height of five miles *less* than those of Ivory or my own, so that in calculating heights by means of the barometer, Laplace's formula would give the heights rather greater; the difference would be, roughly,

At a height of	1 mile,	263 feet
—	2	519
—	3	749
—	4	898

"The pressures in my atmosphere and that of Ivory within these limits may be considered as identical.

"The temperatures in Laplace's atmosphere diminish far more rapidly at first than in Ivory's atmosphere or mine, namely, at the rate of a degree of Fahrenheit for every 210 feet: in my atmosphere and in Ivory's they diminish at the rate of about 1° Fahr. for 350 feet.

"The density in Laplace's atmosphere is greater than in Ivory's or mine.

"The following table, which has been published elsewhere, is repeated here for the sake of comparison:—

Height in Miles.	Lubbock.			Ivory.		
	Pressure.	Temp.	Density.	Pressure.	Temp.	Density.
	inch.	Fahr.		inch.	Fahr.	
0	30·00	+ 50·0	1·00000	30·00	+ 50·0	1·00000
1	24·61	35·0	·84611	24·61	34·4	·84875
2	20·07	19·5	·71294	20·05	18·3	·71373
3	16·25	+ 3·4	·59798	16·22	+ 4·9	·59472
4	13·06	− 13·3	·49903	13·07	− 6·3	·49118
5	10·41	30·6	·41403	10·47	16·2	·40230
10	2·81	126·4	·14499	3·25	45·8	·13407
15	·45	240·6	·03573	·95	56·2	·04044
20	...	...	...	·28	59·4	·01175
22·35	...	−448·0	·00000			
30	...	...	...	·02	60·6	·00097

"It appears to me that accurate observations are still wanting to determine the rate at which the temperature diminishes with the altitude, and especially to decide whether the rate be greater at night than by day. This is the more important as astronomical observations are chiefly made at night. Where I reside in the country, the situation is somewhat elevated, and the climate is cold in consequence, as I believe, but the nights are much colder in proportion than the days."

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